

ATEX – Why You Should Be Worried

If you are even asking yourself the question “should I be worried about explosive atmospheres (ATEX)” then the answer is most probably “yes”. The Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) require employers to control the risks to safety from fire, explosions and substances corrosive to metals. This places the onus firmly on you!

It is well understood that equipment for use in more obvious hazardous locations such as flour mills, coal mines, petrochemical plants and fuel transfer facilities, needs to be certified “intrinsically safe”. However, hazardous locations also include places like water treatment plants, tunnels and underground passageways or any location where a build-up of

naturally occurring flammable material (such as methane or dust) could occur.

Most people are familiar with the definitions of ATEX ‘Zones’. Put simply, Zone 0 means an explosive atmosphere is very likely and Zone 2 means it is unlikely, with Zone 1 being the “grey area” in between. It is easy enough to identify from its markings whether a particular piece of equipment is suitable for a particular Zone, e.g. Ex ia for Zone 0, Ex ib for Zone 1 and Ex ic for Zone 2. However, what is not so obvious is identifying which locations in your plant are in which Zones.

| Gas Group | Typical gases |
|-----------|---|
| IIA | acetone, ammonia, benzene, butane, ethanol, gasoline, methane, naphtha, propane and similar gases |
| IIB | Group IIA plus ether, ethylene, acetaldehyde, cyclopropane and similar gases |
| IIC | Group IIB plus hydrogen and acetylene |

As if the issue of Zones wasn't enough, there is also the consideration of which gases are likely to be encountered. For example, equipment marked as Group IIB must not be used in Zones with hydrogen or acetylene likely to be present. Those gases would require at least Group IIC certification.

Then there is also consideration of the equipment's temperature classification, which specifies the maximum surface temperature that could arise due to a fault. For example, equipment coded T2 could potentially get hot enough to ignite gasoline! However, an equipment coding of T4 is generally considered acceptable, being safe for all gases apart from Carbon Disulfide, which requires T6.

Fortunately, Test Products International (TPI) believes it has greatly simplified things with the triple certification of its TPI 9085Ex Smart Vibration Analyser. The TPI 9085Ex is Group IIC IECEX/ATEX certified for Zone 0 with North American approval for Class 1, Division 1 and is hence certified for use in ANY hazardous locations, with ANY gas groups, ANYWHERE in the world.

The TPI 9085Ex features on-meter analysis for the detection of machinery faults such as unbalance, misalignment, looseness and bearing wear. With full colour OLED display and Bluetooth communications,



the TPI 9085Ex also features colour coded alarms and zoomable on-screen vibration frequency plots with cursor readout. It can store lists (routes) of up to 1000 machines, each with up to 10 measurement points, with full waveform and frequency spectrum (FFT) capture. Uniquely, the TPI 9085Ex delivers high level functionality and capability, including instantaneous bearing temperature measurement, all at very low cost.

The included free-to-use VibTrend PC-based trending and reporting software features high-end benefits such as automatic email notification of alarms and report generation, to implement a full Condition Based Maintenance strategy. Routes and readings can easily be transferred to/from the TPI 9085Ex via Bluetooth using a smart phone or tablet running the free TPI Bridge App.

This allows service personnel to be sent routes and return readings, no matter where they are in the world.

For more information please contact TPI Europe's head office on +44 1293 530196 or take a look on the website at www.tpieurope.com or email sales@tpieurope.com

